

REMARKS

Introduction

The Applicants like to thank the Examiner for pointing out the allowable subject matter in claims 3, 7, and 16. By this Response, the Specification of the Application as well as claims 1, 7, 8, 13, and 14 have been amended. The amendments made are fully supported by the specification as originally filed. No new matter has been introduced. Reconsideration of this application for allowance of all pending claims are hereby respectfully requested in view of the amendments to the claims and the following remarks.

Specification

The title of the invention has been objected to as being not descriptive. Accordingly, Applicants have amended the title in order to overcome the Examiner's objection and request withdrawal of the objection.

The Examiner has also objected the Specification for informalities. By this Response, various parts of the Specification has been amended to address the Examiner's objections. The Applicants believe that the Specification, as amended, overcome the objections.

Claim Rejection – 35 U.S.C. § 112

Claims 1-19 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards to the invention. By this Response, the Applicants have amended independent claims 1, 7, 8, 13 and 14. The amendment is introduced to clarify the invention and no disclaimer has been made. The Applicants believe that claims 1-19, as amended, overcome the

rejection and therefore request the rejection of claims 1-19 under 35 U.S.C. §112, second paragraph be withdrawn.

Claim Rejection – 35 U.S.C. § 103

Claim 1-2, 4, 8-9, 11, 14-15 and 17 have been rejected under 35 U.S.C. §103(a) as being unpatentable over in Lea et al. (“Algorithm for acoustic prosodic analysis”, hereafter “Lea”) in view of Mermelstein (“Automatic segmentation of speech into syllabic units”, hereafter “Mermelstein”) in view of Schmidbauer (“Syllable-based Segment-hypotheses Generation in Fluently spoken speech using Gross Articulatory features”, hereafter “Schmidbauer”). The Applicants respectfully traverse the rejection.

Lea teaches a method of detecting voice frames and reliably computing F0. Under Lea, voice regions are detected by recognizing high sonorant energy, bounded by significant dips in energy. See page 42.7.2, left column, bottom paragraph to right column, top paragraph as well as page 42.7.1, right column, lines 5-8. The fundamental frequency F0, also known as pitch, is then estimated for each voiced region. To reliably do so, Lea teaches an island-driven approach, under which an initial estimate of F0 is derived by first using a frequency value at the highest energy part of each syllable. The initial estimate of F0 is then smoothed by using its nearby values. Notably, Lea does not teach determining a syllable based on “a distribution of energy of a prescribed frequency range” or “a distribution of spectrum” and “estimating, based on the distribution of spectrum... a second portion of said speech waveform for which change is well controlled by said source”, as recited in claims 1, 8, and 14.

As correctly observed by the Examiner, Lea does not teach the minimum of a time distribution waveform. However, the Examiner asserted that Mermelstein teaches the use of a

time distribution waveform. The Applicants respectfully submit that Mermelstein does not remedy the deficiency of Lea pointed out above. In addition, although the Examiner used Schmidbauer as another secondary reference for the feature of “range being stably extracted by the source”, addition of Schmidbauer still does not remedy the deficiency of Lea as pointed out above. Therefore, Lea, Mermelstein, and Schmidbauer, either alone or in combination, do not teach or suggest determining a syllable based on “a distribution of energy of a prescribed frequency range” or “a distribution of spectrum” and “estimating, based on the distribution of spectrum... a second portion of said speech waveform for which change is well controlled by said source”, as recited in claims 1, 8, and 14.

The Examiner is directed to MPEP § 2143.03 under the section entitled “All Claim Limitations Must Be Taught or Suggested”, which sets forth the applicable standard for establishing obviousness under § 103:

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. (citing *In re Royka*, 180 USPQ 580 (CCPA 1974)).

In the instant case, the cited prior art references, either alone or in combination, fail to teach all the claim limitations. Therefore, no *prima facie* case has been established. Thus, claims 1, 8, and 14 are patentable and the Applicants respectfully request that rejection of claims 1, 8, and 14 under 35 U.S.C. §103 be withdrawn.

Claims 2, 4, 9, 11, 15, and 17 depend from claims 1, 8, and 14, respectively. Therefore, claims 2, 4, 9, 11, 15, and 17 are also patentable for at least the same reasons stated above with respect to claims 1, 8, and 14 and for the additional features recited therein. Therefore, the Applicants respectfully request that rejection of claims 2, 4, 9, 11, 15, and 17 under 35 U.S.C. §103 be withdrawn.

Claims 5-6, 12 and 18-19 have been rejected under 35 U.S.C. §103(a) as being unpatentable over in Lea in view of Mermelstein. The Applicants respectfully traverse.

As discussed above, Lea and Mermelstein, either alone or in combination, do not teach or suggest determining a syllable based on “a distribution waveform of energy of a prescribed frequency range” or speech spectrum, as recited in claims 5, 12, and 18. Based on the same legal standard as discussed above as to establishing a prima facie case of obviousness, claims 5, 12, and 18 are not obvious and patentable. Therefore, the Applicants respectfully request that rejection of claims 5, 12, and 18 be withdrawn.

Claims 6 and 19 depend from claims 5 and 18, respectively. Therefore, claims 6 and 19 are also patentable for at least the same reasons stated above with respect to claims 5 and 18 and for the additional features recited therein. Therefore, the Applicants respectfully request that rejection of claims 6 and 19 under 35 U.S.C. §103 be withdrawn.

Allowable Subject Matter

The Examiner indicated that claims 3 and 16 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. §112, 2nd paragraph, set forth in this Office Action and to include all of the limitations of the base claim and any intervening claims. By this Response, claims 1 and 14, from which claims 3 and 16 depend, have been amended. As discussed above, the amended claims 1 and 14 are in condition for allowance. Therefore, claims 3 and 16 are also in condition for allowance for reasons stated with respect to claims 1 and 14 and for additional features recited therein.

Claim 7 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. §112, 2nd paragraph, set forth in this Office Action. By this Response, claim 7 has been amended to address the Examiner’s rejection. The Applicants believe that claim 7, as amended,

overcome the rejection under 35 U.S.C. §112, 2nd paragraph, and therefore, respectfully request the Examiner to withdraw the rejection.

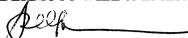
Conclusion

Having fully responded to all matters raised in the Office Action, Applicants submit that all claims are in condition for allowance, an indication for which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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